Report Date: 03 Oct 2013

Summary Report for Individual Task
052-204-1126
Perform Crossarm Change Out (With Conductors)
Status: Approved

Condition: As a Power Line Distribution Specialist in a tactical or nontactical environment when a crossarm needs to be replaced due to deterioration or upgrades, you are given applicable climbing and rigging equipment and/or a Bucket/Material Handler Truck, a groundman, the required hand tools, the applicable personal protective equipment (PPE), and a lockout and tagout kit. This task should not be trained in MOPP.

Standard: Perform a crossarm change out from a minimum height of 35 feet and in less than 30 minutes by removing the old crossarm, lowering it to the ground, and raising and installing the new crossarm.

Special Condition: None

Safety Level: Low

MOPP: Never

Task Statements

Cue: None

DANGER

1. THIS TASK SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL WHO ARE KNOWLEDGEABLE IN THE INSTALLATION, OPERATION, AND MAINTENANCE OF MEDIUM VOLTAGE ELECTRICAL POWER GENERATION EQUIPMENT AND ITS ASSOCIATED HAZARDS. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.

2. A VOLTAGE DETECTOR SHOULD BE USED TO ENSURE THAT THE CABLES ARE NOT ENERGIZED. MATERIAL (SUCH AS A LEAD SHEATH THAT ACTS AS A SHIELD) MUST NOT BE BETWEEN THE DETECTOR AND THE CONDUCTORS OF THE CIRCUIT BEING TESTED. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.

3. ALL SYSTEMS ARE CONSIDERED ENERGIZED UNTIL THE ENERGY SOURCE IS REMOVED,LOCKED OUT (WHEN POSSIBLE), AND TAGGED OUT. WHEN ENERGY-ISOLATING DEVICES CANNOT BE PHYSICALLY LOCKED OUT, USE TAGOUT PROCEDURES. FAILURE TO COMPLYMAY CAUSE PERMANENT INJURY OR DEATH.

4. BEFORE USING THE AERIAL-BUCKET TRUCK NEAR ENERGIZED LINES, THE TRUCK CHASSIS MUST BE GROUNDED FOR SAFETY.

5. OBSTACLES IN THE PATH OF THE AERIAL-BUCKET MUST BE AVOIDED. FAILURE TO COMPLY MAY CAUSE PERMANENT INJURY OR DEATH.

6. THE TRUCK MAY BECOME ENERGIZED AND MUST BE MOUNTED PROPERLY. FAILURE TO ENSURE THAT CONTACT IS NOT MADE BETWEEN YOU, THE TRUCK, AND THE GROUND AT THE SAME TIME MAY CAUSE PERMANENT INJURY OR DEATH.

WARNING

1. WHEN POSSIBLE, INDIVIDUALS NOT ACSENDING THE POLE MUST MAINTAIN A MINIMUM DISTANCE OF AT LEAST 10 FEET FROM THE BASE OF THE POLE TO ENSURE THAT THEY ARE NOT STRUCK BY DROPPED OBJECTS. FAILURE TO COMPLY MAY CAUSE IMMEDIATE PERSONAL INJURY.

2. USE PROPER CLIMBING TECHNIQUES TO AVOID SLIPPING OR FALLING, WEAR LONG SLEEVES AND GLOVES TO AVOID SPLINTERS, AND WEAR PROTECTIVE EYEWEAR WHEN USING METAL TO STRIKE METAL. FAILURE TO COMPLY MAY CAUSE IMMEDIATE PERSONAL INJURY.

CAUTION

None

Remarks: None

Notes: This task can be done by both climbing and/or a Bucket/Material Handler truck. Use proper safety when using either method.

Performance Steps

1. Inspect equipment and tools for defects.

2. Perform switching, blocking and tagging procedures.

3. Remove conductors from cross-arm.

    a. Prepare tools, hand-line, tag lines, stakes, truck or climbing gear and new tie wires.

    b. Untie conductors.

    c. Tag out outermost conductors.

        (1) Put stakes in the ground.

        (2) Tie with bowline knots.

    d. Two screwdrivers for innermost conductors.

4. Remove the crossarm.

    a. Remove insulators.
    Note: Inspect insulators to determine if they also need to be replaced.

    b. Remove the lag screw.

    c. Hitchhike up and attach the handline to the pole using the collar rope with the hook facing down.

    d. Tie the clove hitch to the end of the crossarm.

    e. Remove the through-bolt nut.

    f. Remove the crossarm, and place it on the safety strap.

    g. Lower one end of the crossarm to allow hanging it on your safety strap using the insulator pin.

    h. Tie a half-hitch loop below the insulator pin.

    i. Communicate your intentions with the groundman, guide the crossarm down, and allow the groundman to lower the crossarm to the ground.

5. Install the new crossarm.

    a. Place the safety strap over the head of the through bolt.

    b. Tell the groundman to raise the crossarm by using the insulator pin end of the crossarm being sent up first to just below your feet.

    c. Correctly communicate your intentions with the groundman, and then guide the crossarm up until you are able to rest the insulator pin on your belt.

    d. Remove the half hitch.

e. Tell the groundman to raise the crossarm to allow you to set the crossarm across your safety strap.

f. Install the crossarm onto the through bolt.

g. Tighten the through-bolt nut.

h. Remove the clove hitch.

i. Level the crossarm.

j. Drive in the lag screw.

k. Install insulators.

6. Position and secure conductors.

a. Innermost then outermost conductors.

b. Install new conductor ties.

7. Close out switching, blocking and tagging procedures by removing blocking and tagging devices.

8. Ensure that the items listed in the conditions are properly cleaned and stored.

(Asterisks indicates a leader performance step.)

Evaluation Preparation: Provide the Soldier with all the items listed in the conditions. Give the Soldier a safety briefing before starting the test, and ensure that all safety precautions are followed. Prepare the testing area and equipment in advance to ensure that the task standards can be met.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Inspected equipment and tools for defects.			
2. Performed switching,blocking and tagging procedures.			
3. Removed conductors from cross-arm.			
4. Removed the crossarm.			
5. Installed the new crossarm.			
6. Positioned and secured conductors.			
7. Closed out switching,blocking and tagging procedures by removing blocking and tagging devices.			
8. Ensured that the items listed in the conditions were properly cleaned and stored.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	EM 385-1-1	Safety and Health Requirements.	No	No
	LCH	The Lineman's and Cableman's Handbook, 11th Edition, McGraw-Hill. 2007	No	No
	TM 3-34.86	Rigging Techniques, Procedures, and Applications {MCRP 3-17.7j}	No	No
	TM 5-684	Facilities Engineering - Electrical Exterior Facilities. NAVFAC MO-200/AFJMAN 32-1082.	No	No
	TM 5-811-1	Electric Power Supply and Distribution {AFJMAN 32-1080}	No	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT.

For classroom instruction:
No major environmental impact, training entirely of an administrative or classroom nature, with little or no environmental impact on the environment, equipment or personnel. [32 CFR Part 651, Appendix B, Section II, (i)(2)]

For practical exercises and demonstrations:
Instructors should complete a risk assessment before conducting training, operations, or logistical activities. Risk assessments assist instructors in identifying potential environmental hazards, develops controls, make risk decisions, implement controls, and ensure proper supervision and evaluation. FM 3-100.4, Environmental Considerations in Military Operations.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination.

Prerequisite Individual Tasks :

Task Number	Title	Proponent	Status
052-204-1203	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Bucket/Material Handler Truck	052 - Engineer (Individual)	Approved
052-204-1117	Inspect Hot-Line Equipment	052 - Engineer (Individual)	Analysis
052-204-1108	Inspect Safety Equipment	052 - Engineer (Individual)	Analysis Completed
052-204-1124	Climb a Utility Pole	052 - Engineer (Individual)	Approved
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Approved

052-204-1119	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Line Truck With Auxiliary Equipment	052 - Engineer (Individual)	Approved
052-204-1201	Maintain Climbing Equipment	052 - Engineer (Individual)	Approved
052-204-1202	Maintain Rigging/Hoisting Equipment	052 - Engineer (Individual)	Approved
052-204-1125	Operate a Line Truck with Auxiliary Equipment	052 - Engineer (Individual)	Approved
052-204-1128	Interpret an Electrical One-Line Diagram	052 - Engineer (Individual)	Analysis
052-204-1114	Rescue an Injured Victim From a Utility Pole	052 - Engineer (Individual)	Approved
052-204-1116	Rescue an Injured Victim From an Aerial-Bucket Truck	052 - Engineer (Individual)	Approved
052-204-1127	Perform Groundman Duties	052 - Engineer (Individual)	Approved
052-204-1212	Operate a Bucket/Material Handler Truck	052 - Engineer (Individual)	Analysis Completed
052-204-1204	Tie Rope Knots and Splices	052 - Engineer (Individual)	Analysis Completed

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
052-204-1203	Perform Operator Preventive-Maintenance Checks and Services (PMCS) on a Bucket/Material Handler Truck	052 - Engineer (Individual)	Approved
052-204-1209	String Single Phase and Three Phase Overhead Conductors	052 - Engineer (Individual)	Analysis Completed
052-204-1117	Inspect Hot-Line Equipment	052 - Engineer (Individual)	Analysis
052-204-1215	Splice a Medium-Voltage Overhead Power Cable	052 - Engineer (Individual)	Approved
052-204-1120	Install a Grounding Set	052 - Engineer (Individual)	Approved
052-204-1202	Maintain Rigging/Hoisting Equipment	052 - Engineer (Individual)	Approved
052-204-2301	Perform Switching, Blocking and Tagging Procedures	052 - Engineer (Individual)	Approved
052-204-1210	Sag Single Phase and Three Phase Overhead Conductors	052 - Engineer (Individual)	Analysis Completed
052-204-2304	Perform Secondary Voltage Live-Line Testing	052 - Engineer (Individual)	Analysis Completed
052-204-1125	Operate a Line Truck with Auxiliary Equipment	052 - Engineer (Individual)	Approved
052-204-1212	Operate a Bucket/Material Handler Truck	052 - Engineer (Individual)	Analysis Completed
052-204-2219	Supervise the Use of a Line Truck With Trailer to Load and Unload Utility Poles	052 - Engineer (Individual)	Approved
052-204-1204	Tie Rope Knots and Splices	052 - Engineer (Individual)	Analysis Completed

Supported Individual Tasks :

Task Number	Title	Proponent	Status
052-204-2302	Install Distribution System Protection and Equipment (Energized)	052 - Engineer (Individual)	Analysis Completed
052-204-1123	Secure Conductor to Insulator (De-energized)	052 - Engineer (Individual)	Approved
052-204-2306	Supervise the installation of a Utility Pole	052 - Engineer (Individual)	Analysis Completed
052-204-2307	Supervise the Installation of a Utility Pole Line	052 - Engineer (Individual)	Analysis Completed
052-204-2210	Secure Conductor to Insulator (Energized)	052 - Engineer (Individual)	Approved

052-204-2216	Perform Maintenance on Electrical Distribution Equipment	052 - Engineer (Individual)	Approved
052-204-2220	Supervise the Mechanical Erection of a Utility Pole	052 - Engineer (Individual)	Approved
052-204-2217	Manage a Power Line Crew	052 - Engineer (Individual)	Analysis Completed
052-204-1211	Install Distribution System Protection and Equipment (De-energized)	052 - Engineer (Individual)	Approved

Supported Collective Tasks :

Task Number	Title	Proponent	Status
05-3-5704	Perform Nonorganic Equipment Power Distribution Maintenance Operations	05 - Engineers (Collective)	Approved
05-3-5725	Install Aerial Electrical Power Distribution Equipment	05 - Engineers (Collective)	Approved
05-3-5704	Created from Template: Perform Nonorganic Equipment Power Distribution Maintenance Operations	05 - Engineers (Collective)	Analysis

ICTL Data :

ICTL Title	Personnel Type	MOS Data
12Q10, Power Line Distribution Specialist, skill level 1	Enlisted	MOS: 12Q, Skill Level: SL1